charted the hour of commencement was found to be very distinctly later as one proceeded from west to east, and, although the figures were often contradictory, it was possible to draw lines that represent what may be called the prevailing hour of commencement. These lines are drawn in a somewhat generalized form, and it is possible that there should be more anomalous hours of commencement than those which are shown in the two small areas, one in Monmouthshire, the other west of Cambridge; but these were the only places where the weight of evidence seemed to us to demand exceptional treatment. (See fig. 2.)

Speaking generally, the isochronic lines ran from north to south, with a slight tendency to diverge southward; but it may be that they would be better viewed as concentric curves, perhaps portions of circles, the common center of which lay somewhere near the northwest of Ireland. The facts, as shown by the isochronic map, are that the snowstorm began in the north of Ireland shortly before noon of Christmas Day, or about six hours before the center of the depression arrived there, and that the storm began later and later toward the east and south, until it was after 2 a. m. on the 26th before it commenced at the mouth of the Thames, i. e., six hours before the center of the depression arrived there.

It thus appears probable that snow began in the front of the approaching cyclone about six hours in advance of the passing of the trough, and it appears likely that the snowfall lasted until immediately after the trough passed; but the hours given for the cessation of the snow are less precise than those for its commencement. At Camden Square the barograph showed that the trough passed about 6 a. m., after which the barometer began to rise, and the snow ceased about the same time.

The map shows that at noon on Christmas Day snow was beginning on the northeast of Ireland; at 2 p. m. it was snowing along a line from Islay and Kintyre to Larne; at 4 p. m. the snow reached Mull, Galloway, and almost the Isle of Man; at 6 p. m. it almost reached Skye, Glasgow, Dumfries and the coast of Lancashire; at 8 p. m. it was snowing from Skye to Manchester and thence to Cardiff and Bridgwater; at 10 p. m. the line of the commencing storm ran from the Tyne through Leeds, Sheffield, Derby and Birmingham, to near Bournemouth; by midnight it stretched from Goole to Brighton, and, sweeping over London, by 2 a. m. on the 26th, it ran from Hull through Lincoln and Cambridge to Dover. An hour later the storm had passed out into the North Sea, and the whole country was painted white from the Isle of Skye to the Isle of Thanet.

The rate of advance of the front of the storm measured by the commencement of precipitation was least rapid in the north, where it was 12½ miles an hour, and most rapid in the south, where it was about 19 miles an hour, but the rate varied a little from point to point. The interesting fact is, however, that a motor car could have kept out of the storm by traveling, without exceeding the legal speed limit, in the direction of its progress. At 8 o'clock on Christmas night snow was beginning to fall simultaneously along a line of 500 miles, this being the longest snow-yielding portion of the storm front at any time.

WELL-MARKED FOEHN EFFECTS WITH GREAT DIURNAL RANGES OF TEMPERATURE IN SOUTHERN CALIFORNIA.

By Prof. A. G. McADIE. Dated San Francisco, Cal., December 2, 1907.

Some unusual ranges of temperature were recorded in California at the close of November, 1907. A well-marked foehn effect was noticeable in southern California November 29 and 30, and December 1. Maximum temperatures of 86° occurred at Los Angeles and at San Diego on the afternoon of November 29. On the 30th, maximum temperatures of 84° occurred at Los Angeles and at San Luis Obispo, and 80° at San Diego. On December 1 maximum temperatures ranged from 80° to 85° thruout most of California.

The morning temperatures thruout this section were generally low, and at many places frost was reported in the morning. For example, at San Luis Obispo frost occurred on the morning of December 1, with a minimum temperature of 38°, which was also the temperature at the time of the observation—4:45 a. m. The temperature at the time of the regular observation preceding the frost was as high as 86°, and on the afternoon following as high as 84°. We therefore have a range of about 50°; or, allowing 32° for the frost temperature, a cooling of 54° between 3 p. m. and 5 a. m., or about 14 hours. In my experience as forecaster on this coast I do not recall such a temperature amplitude. The frost deposit was probably not heavy; but we must assume that the temperature would have been still lower but for the latent heat of condensation of vapor to water and water to ice.

The illustration is valuable, we think, in connection with the theory of the nocturnal cooling of the ground and atmosphere.[1] The observation may be of value in connection with the determination of the coefficient of radiation of air. It may be assumed that the air was clean, free from dust and water vapor; altho a puzzling condition is that San Luis Obispo is only about 10 miles from the coast. The elevation of the thermometer is about 47 feet above the ground, and the elevation above sea level is about 200 feet. It would seem that under the conditions given, the heat waves—long wave lengths—past thru the air within 40 feet of the ground, with comparatively little absorption. The fall in temperature would seem to be a pure radiation effect and the illustration shows how very important radiation is in frost formation.

THE CENTRAL PENNSYLVANIA METEOR OF OCTOBER 1, 1907.

By Prof. HENRY A. PECK. Dated Syracuse University, Syracuse, N. Y., December 13, 1907.

The evening of October 1, 1907, Mr. Clayton B. Chappell and Mr. T. H. Parkhurst, seniors in the Syracuse University, reported that they had seen a remarkable meteor about 6:30 p. m. A few days afterwards some newspaper clippings arrived, showing that it had been observed over a range of territory that extended from Toronto to New York City. Meanwhile there had appeared in New Jersey and Pennsylvania another meteor of the largest size, which had attracted universal attention over a wide area. The Central Office of the Weather Bureau made a very thoro postal-card canvass of this region, the report of which will appear in a later number of the MONTHLY WEATHER REVIEW. Among the answers were many that evidently referred to the earlier meteor, and it is largely with these as a basis that the following has been written.

Aside from the regular staff of observers of the Weather Bureau, the following have kindly furnished information:

New York.

Charles P. Arnold, Angelica.	O. H. Hauber, Ithaca.
P. J. Flanagan, Brooklyn.	Kenneth Baker, Jamestown.
Felix C. Moore, Buffalo.	W. H. Knapp, Jamestown.
Mrs. Wallace W. Jacques, Chazy.	Charles A. Hoag, Lockport.
C. E. Robinson, Clay.	Mrs. Eugene Buttrick, Lockport.
Mrs. G. O. Barnes, Cortland.	M. D. Clinton, Newark Valley.
Harold Henry, Dannemora.	William P. Ray, Olean.
F. J. Hill, Dryden.	Mrs. A. W. Ferrin, Preble.
Frank Fayent, Fort Plain.	S. C. Williams, Rochester.
Mrs. Nellie Sherman, Greenwood.	C. B. Chappell, Syracuse.
E. L. W. Smithers, Hammond.	T. H. Parkhurst, Syracuse.

New Jersey.

Samuel K. Pearson, jr., Jersey City.

[1] See S. Tetsu Tamura, Monthly Weather Review, April, 1905, vol. xxxiii, p. 138–140.